Evaluating Characteristics Adherence Level to Design Framework for Pervasive Projects

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ABSTRACT

The proliferation of wireless communications and mobile computing is producing a revolutionary change in information society. Ubiquitous Computing is a recent paradigm whose objective is to support users in accomplishing their tasks, accessing information, or communicating with other users anytime, anywhere. In this paper, the authors present novel characteristics of pervasive projects; they display different levels of adherence to the ubiquity characteristics. They suppose this can be considered an important step towards to provide the core elements of an architecture for intelligent environment. This framework can be used to support the characterization of ubiquitous projects according to their ubiquity adherence level from different application domains (smart house, pervasive healthcare, U-learning and urban space).

Keywords: *Pervasive Characteristics, Smart Space, Ubiquitous Computing, Ubiquitous Scenarios*

1. INTRODUCTION

Ubiquitous computing is a research field of computing technology that started at the 90s of the last century with Mark Weiser's seminal work entitled "*The Computer for the 21st Century*" (1991). In this work, he shared his vision of a new way of thinking about computers. Ubiquitous Computing represents a new direction on the thinking about the integration and use of computers in people's lives. It aims to achieve a new computing paradigm, one in which there is a high degree of pervasiveness and widespread availability of computers or other Information and Communications Technology devices in the physical environment. As consequence, the physi-

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cal world is enriched with the advantages of processing power, storage and communications capabilities of computers.

This paper addresses a survey to analyze Ubiquitous Computing characteristics as regards their pertinence and relevance. We introduce Ubiquitous scenarios that can display different levels of features. As a result, we identified ubiquitous concepts; they form the core elements of pervasive projects.

The rest of the paper is organized as follows, after reviewing the state of the pervasive computing. Section 2 is devised into two subsections. First, we examine pervasive scenarios from different application domains (smart house, pervasive healthcare, U-learning and urban space). Second, we characterizing ubiquitous scenarios and identify fundamental properties that form or are part of those environments. In section 3, we describe conceptual framework to support the characterization of ubiquitous projects. In section 4 we analyse results regarding the pertinence of each pervasive characteristic Finally, we conclude this paper in section 5 and described future possibilities works.

Considering the following scenarios. Figure 1 that how our smart home will work (Khalfi et al., 2014). The lights in the room will turn on an off when you enter and leave the room automatically. Bases of the last scenario, several pervasive computing characteristics and issues have been identified in Khalfi et al. (2013), Figure 2.

Figure 1. Smart House